Cutting edge research aids better understanding of hurricane risk

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Landfalling hurricanes in the US are the costliest of all natural hazards, with the total bill for Hurricanes Katrina, Wilma and Rita in 2005 reaching an estimated $90bn.

Hurricanes and Long-term Climate Variability , a report from Lloyd's and the Met Office, examines the latest research papers from a number of leading organisations.

The study explores how atmospheric climate and oceanic conditions influence the formation of powerful storms and what drives them to make landfall.

In recent years, we have made great strides in understanding the global climate and providing medium and long range forecasts for the most destructive storms, like North Atlantic hurricanes.

This study presents the very latest knowledge on what drives changes in hurricane landfalling risks by examining the underlying physical causes. This approach takes steps towards the validation of some commonly used statistical relationships and will potentially find others.

Neil Smith, Manager, Emerging Risks at Lloyd's said: "This study adds to the existing body of research on hurricane risk. It should help support and improve insurers' understanding of the risk, and play an important role in helping them manage their exposures and mitigate their potential losses".

Outstanding research

The severity and frequency of hurricanes is affected by a number of factors, in particular the long-term variability of the Atlantic atmospheric climate and sea surface temperatures, as well as external factors, such as man-made aerosols and volcanic eruptions.

Dr Matt Huddleston, Principal Consultant at the Met Office, said: "To date, the insurance industry has mainly focused on sea surface temperature when modelling hurricane risk, but they should also consider atmospheric and remote influences.

"This research will allow participants in the market to understand different views from the market norm, which should make for a more robust and diverse industry which is overall less exposed to hurricane risk".

Dr Huddleston continued:"There is still a considerable amount of uncertainty in the science linking hurricanes and climatic and oceanic phenomena, but scientific understanding is growing quickly.

"It is an exciting time to be a climatologist. There is a lot of interest in Atlantic hurricanes and North West Pacific storms, partly driven by insurers' exposures, but also because it is a new and growing area of scientific understanding".

Business and Science working together

Last year Lloyd's worked with the Met Office to produce a report on the value of long range forecasting for insurers.

Our scientists have also been recognised by Lloyd's Science of Risk Prize, now in its third year. The prize is awarded to the best scientific research in areas of relevance to insurers, including climate change and natural hazards.

Met Office researcher Doug Smith won the inaugural Science of Risk Prize in 2010 for his paper on long range hurricane forecasting, while Adam Scaife won the Climate Change category in 2011.

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